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RECONNAISSANCE, ECONOMIC BASE ANALYSIS AND FORECAST, GRANDE RONDE RIVER BASIN, UNION COUNTY, OREGON

Public Health Service
Portland, Oregon

April 1961

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WORKING PAPER NO. 1

COLUMBIA RIVER BASIN PROJECT
For Water Supply and Water Quality Management

RECONNAISSANCE
ECONOMIC BASE ANALYSIS AND FORECAST
GRANDE RONDE RIVER BASIN
UNION COUNTY, OREGON

DATE: April, 1961

Prepared by _____

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Public Health Service
Region IX

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RECONNAISSANCE
ECONOMIC BASE ANALYSIS AND FORECAST
GRANDE RONDE RIVER BASIN
UNION COUNTY, OREGON

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Prepared by: Economic Studies Group
Water Supply and Pollution Control Program, Pacific Northwest
April, 1961

April, 1961

RECONNAISSANCE
ECONOMIC BASE ANALYSIS AND FORECAST
GRANDE RONDE RIVER BASIN
UNION COUNTY, OREGON

A. Purpose and Scope of Survey

This survey is for the purpose of providing basic data about the economy of the Grande Ronde River Basin. This data will be utilized in the preparation of the water supply and pollution control recommendations of the U. S. Public Health Service for the Grande Ronde River. These recommendations were requested by the U. S. Army Corps of Engineers in connection with their evaluation of projects in this area. This survey is of a reconnaissance nature and is intended only to describe the general nature of the economy and the major possibilities for change. Although existing reports and statistics provide the basis for most of the survey, a number of specific economic growth factors have been explored on a reconnaissance basis with appropriate agencies having knowledge of phases of the economy.

B. Study Area and Study Period

For the purpose of this survey, the study area has been defined as Union County, Oregon, and its major communities. The study period is the 50-year period ending in 2010.

C. Geography of Study Area

The Grande Ronde River is the principal water course in Union County. It is flanked by the Blue Mountains and the Wallowa Mountains. The Grande Ronde River Basin in the center of the county occupies about 360 square miles. This basin is nearly flat and receives an annual rainfall of about 20 inches. The growing season on the basin floor is about 160 days.

A more detailed description of the general physical features, climate, and history of the study area is available in the March 1955 U. S. Bureau of Reclamation report entitled 'Grande Ronde Project, Oregon'.

D. Land and Water Uses

Union County contains about 1.3 million acres of land. About 60 percent of this is classed as commercial forest land and about 15 percent is cropland. The major land cover classifications of the county are described in Table 1.

Table 1
LAND COVER FOR UNION COUNTY, OREGON

Forest Land		Acres
Commercial		778,630
Ponderosa pine	253,940	
Other	524,690	
Noncommercial		43,390
Nonforest Land		
Vegetative land (cultivated, grass or brush)		439,560
Nonvegetative land (including barrens and cities)		36,660
Reservoirs		1,260
TOTAL, all land		1,229,500

Source: Forest Statistics for Umatilla and Union Counties, Oregon, Forest Survey Report 135, Pacific Northwest Forest and Range Experiment Station, Forest Service, U. S. Department of Agriculture, April 1960.

Present uses for water in the county are for municipal and industrial water supplies, irrigation, recreation, and the conveyance of treated sewage effluent. Irrigation use is limited to serving 3,300 acres with a full water supply, and about eight times this acreage with a partial supply. Recreational use of water is considerable in the mountain areas, but on the floor of the basin is limited to steelhead and trout fishing.

E. Existing Economic Base

1. Population

The population of Union County has been relatively stable since 1900. Between 1950 and 1960, the county's population increased 0.7 percent compared to Oregon's growth of 15.5 percent and a national growth of 18.5 percent. Half of the county's 1960 population resided in LaGrande and about a third lived outside the four major communities of the county. Population trends and distribution for Union County are shown in Table 2.

Table 2
POPULATION STATISTICS OF UNION COUNTY, OREGON

	Number of Persons							
	1890	1900	1910	1920	1930	1940	1950	1960
County Total	12,044	16,070	16,191	16,636	17,492	17,399	17,962	13,180
LaGrande	2,583	2,991	4,843	6,913	8,050	7,747	8,635	9,014
Union	604	937	1,483	1,319	1,107	1,398	1,307	1,490
Cove	223	--	433	399	307	321	282	311
Elgin	227	603	1,120	1,043	728	987	1,223	1,315
Remainder of County	8,407	--	8,312	6,962	7,300	6,936	6,515	6,050

Distribution of Population in 1960

LaGrande	49.6%
Union	8.2
Cove	1.7
Elgin	7.2
Other	33.3

Source: Based on population counts by the U. S. Bureau of Census.

2. Industry, Agriculture, and Employment

Agriculture and forest products are the major basis for the county's economic activity. The distribution of employment for 1950 is shown in Table 3. This Table indicates that agriculture is the largest employer and lumber and wood products manufacturing is second among the basic or primary industries. The large number of workers in the category of "Transportation and utilities" include the Union Pacific Railroad shops at LaGrande.

Table 3
UNION COUNTY EMPLOYMENT DISTRIBUTION IN 1950

	Number of workers	
All employed		6,598
Agriculture		1,391
Forestry, Fisheries, Mining		31
Construction		401
Manufacturing		948
Food and Kindred	122	
Lumber and Wood Products	699	
Other	127	
Transportation and Utilities		876
Trade		1,189
Wholesale	183	
Retail	1,006	
Other		573

Source: 1950 Census of Population, U. S. Bureau of the Census.

Examination of the statistics of workers 'covered' by the Oregon Employment Security Law indicates that there has been little change in the employment pattern since 1950. An exception is that the Union Pacific shops have been moved fromLaGrande. In addition there has been a small amount of growth among the various secondary industries such as trade and services. From examination of the 1959 Census of Agriculture there is also an indication that there is a downward trend in agricultural employment. Unfortunately the detailed statistics of 1960 Census of Population are not yet available to confirm these trends.

The forest products industry of the county is based on the large forested areas in and adjacent to the county. As indicated in Table 1, about 60 percent of the county's land is classed as commercial forest land and about half of this is in Ponderosa pine. The timber harvest in 1959 was slightly over 110 million board feet (Scribner log rule). Almost three-fourths of this was from private lands. The pattern of recent years has been similar to this. Manufacturing of forest products is confined to lumber, furniture, and millwork.

The present agriculture of the county is mainly based on the production of small grains and seed. The land use of agricultural land is described in Table 4. Of the acreage indicated for cropland harvested, about half was devoted to small grains in 1959, about one-third to hay (mainly alfalfa) and significant amounts to seed crops, peas, and vegetables. The Bureau of Reclamation has estimated that the study area includes a total of 150,000 acres of agricultural lands. Although the 1959 Census of Agriculture indicates that 27,000 acres were irrigated, only about one-eighth of these were considered to have an adequate supply.

Table 4
AGRICULTURAL LAND USE IN UNION COUNTY

	1959
Number of farms	873
Average size of farm, acres	604
Land in farms, acres	527,355
Cropland harvested, acres	107,501
Cropland used only for pasture, acres	21,085
Cropland not harvested or pastured, acres	48,662
Cropland summer fallow, cultivated, acres	(35,285)
Woodland pastured, acres	19,590
Other pasture, acres	174,324
Irrigated land in farms, acres	27,073

Source: 1959 Census of Agriculture

The mineral industry of the county is almost entirely confined to materials for the construction industry. The 1959 value of mineral production was $663,000, which is slightly over 1 percent of the State's total production of minerals. The county's mineral products, listed in order of value, are as follows: stone, sand and gravel, clays, gold.

Employment in transportation and utilities has been reduced by several hundred persons since 1950 because the Union Pacific Railroad abolished its shops at LaGrande. Employment in this category at the present time is limited to that required to serve the local area. The remaining categories, which account for about half the total employment, are also considered to be of a service or secondary nature. Part of this employment, however, is in activities which benefit from tourists and the recreational opportunities of the adjoining Wallowa and Blue Mountains.

F. Potential Growth

Three principal possibilities for growth are considered likely. The net result of all three is anticipated to produce only a small increase in the study area's population during the study period. This increase is considered to be of about the same (or slightly greater) order of magnitude as the area's historical growth trends.

Agriculture on much of the basin floor is anticipated to gradually convert to irrigation if satisfactory water supplies are made available. The Grande Ronde Project, as described in the March 1955 report of the U. S. Bureau of Reclamation, proposed to irrigate almost 59,000 acres. This project was not carried out because of the lack of desire of local residents to alter their cropping practices. The land limitation of 160 acres per person was probably also a major contributor to the reluctance to participate in the project. Although much of the same sentiment towards irrigation still exists, it is considered likely that a gradual shift would take place if a multiple-purpose project would make water available at a lesser cost than previously proposed. This shift would be accelerated if a dry cycle occurred or if price supports for wheat were less favorable. A shift to irrigation would bring about a growth in farm employment due to the more intensive farming practices likely to occur. The growth in farm employment would be much greater except that it is considered likely to be partially offset by farm mechanization. Estimates by persons in the county connected with agriculture place the increase in farm employment at from 50 percent to 100 percent on the acreage converted to irrigation. Considering total farm employment, this would be a growth in the range of 17 percent to 33 percent during the study period if irrigation comparable to the Bureau of Reclamation proposal occurs. Such an increase in irrigated acreage is not considered likely to create a significant

growth in the food processing industry of the area. Although a sugar beet refinery is a possibility in this regard, it would require a major conversion to sugar beets by most farm operators in the basin and in adjacent areas in order to make a minimum sized refinery practical. A more likely possibility is the increased production of livestock as part of the crop from irrigated land. This activity lends itself to gradual conversion and is not inconsistent with the capabilities of the existing operations. Such an operation might possibly make a local meat packing operation feasible, but the availability of such facilities in the Pendleton area will lessen this possibility considerably.

The forest products industry of the study area is considered likely to experience a small amount of growth during the study period. The forest resource is presently being utilized at more than its maximum long range capability. Timber on the Federal lands is being harvested at the sustained yield capacity, while timber on private lands is being harvested at a rate greater than the sustained yield capacity. In the near future some drop in harvest and in employment will occur until the old cutover lands are again ready for harvest. In about ten years increased utilization of currently noncommercial species will also increase the harvest and employment opportunities in the forest. Manufacturing operations are not expected to change drastically. Increased automation might be offset by increasing the amount of manufacturing done on the raw materials. A pulp plant is not considered likely because manufacturing operations providing the main source of chips are part of the same company's operations which owns a pulp mill at Wallula, Washington, on the Columbia River. The Wallula pulp mill, which is within reasonable transportation distance, is currently being expanded and will be able to continue to handle the chips from the study area. A further (and severe) limiting factor to the location of a pulp mill in the study area is the difficulty of obtaining an adequate water supply and disposing of industrial waste. Although a fiberboard plant is a possibility, it would be in competition with the pulp mill for most of its raw materials, and is not considered likely in the near future.

The third potential for growth in the study area is the increase in service activities due to such factors as increased tourist and recreational activities in the surrounding area, growth of the college at LaGrande, and an increasing ratio of service activities to primary or basic industry. These factors, of course, have been in operation in the past and have helped to offset some of the declines in certain other parts of the area's economy.

C. Potential Land and Water Uses

The changes which can be anticipated in land uses are a matter of intensity of use rather than change in classification of use. Although about the same relative amounts of forest land can be expected to be in

the various stages of production and harvest, the actual areas will be rotated according to the production cycle. It is expected, also, that there will be a gradual trend toward production from younger forests, the use of species not previously considered to be commercial, and the increased use of insecticides and fertilizers on the forest crop.

The conversion of agricultural land to irrigated land would bring about a major change in the intensity of land use, as well as in the type of crops and cultivation practices, and will bring annual cropping to many areas now summer fallowed in alternate years. Increased irrigation would also create a major potential for degrading water quality through irrigation water return flows. The elimination of floods through storage projects would also make possible a greater utilization of the agricultural land, but would probably result in an overall improvement of water quality by permitting increased low season flows.

The construction of water control projects in the area would make several changes in water use likely. These would include a large increase in the use of water for irrigation, the availability of water for augmenting municipal and industrial water supplies, the creation of reservoirs with recreation potentials, and the augmentation of low river flows during critical periods. The latter would make possible the assimilation of larger amounts of treated municipal or industrial waste, would possibly enhance the fishery resource, and might have recreational possibilities not now developed.

H. Conclusions

The study area's economy is mainly based on forest products and non-irrigated agriculture, with contributions to the economy from tourists and recreation in the adjacent areas, and from the College of Education at LaGrande. The communities of the area are based on both lumber manufacturing activities and providing services for the surrounding areas and activities. The population growth of the area has been very stable with only a 12 percent increase in the last 50 years.

The growth of population over the next 50 years is expected to be similar to the historical growth. Forest products industries are expected to experience little overall growth in employment. Agricultural employment might increase by 25 percent (average of range of forecast) if a major conversion to irrigation is made. Some increases in service activities are likely.

The major potential change in land use would be the conversion of agricultural land to irrigation. This would depend on the development of water storage projects. Such a development might have a variety of

influences of importance to water supply and water quality management considerations. These would include the following major possibilities:

Increased irrigation creating more intensive land use and irrigation water return flows,

Augmentation of municipal and industrial water supplies,

Increased capacity of affected streams for assimilation of treated waste,

Improvement of the fishery resource,

Increased recreational use of the area's streams both on the reservoirs and downstream.

ADDENDUM NO. 1

COPY

DHEW, PHS, REGION IX

TO: W. W. Towne, Director
Columbia River Basin Project

DATE: November 29, 1961

FROM: John H. Davidson, Chief
Economic Studies, Columbia River Basin Project

SUBJECT: Population Forecast for the Grande Ronde River Basin, Union County, Oregon

At the request of Jim Britton, we have reviewed our reconnaissance report, "Economic Base Analysis and Forecast, Grande Ronde River Basin, Union County" (dated April, 1961), in order to derive population statistics from the conclusions presented in the report. These conclusions indicated that future growth would likely continue at the historical rate which has been 12 percent increase in the last fifty years. This forecast of future growth included consideration of an irrigation project on the Grande Ronde River. In deriving population figures for the area, the future growth rate was divided into two segments, with the community of LaGrande estimated to grow at the rate of 0.3 percent a year and the rest of the county estimated to grow at a rate of 0.2 percent a year. The estimates were rounded to the nearest 50 persons. The result of this statistical maneuver is to produce a total growth estimate for the county over the next fifty years of slightly more than 13 percent. An estimate for the 50-year period 2010-2060 was prepared by applying a 12 percent increase equally to each of the 2010 population figures. The computed forecast of population statistics is shown in the following tabulation.

	1960	1980	2010	2060
County Total	18,180	19,050	20,550	23,000
LaGrande	9,014	9,550	10,450	11,700
Union	1,490	1,550	1,650	1,850
Elgin	1,315	1,350	1,450	1,600
Remainder of County	6,361	6,600	7,000	7,850

/s/ John H. Davidson